TEXTILE TECHNOLOGY DIGEST

VOLUME 11 AUGUST, 1954 NUMBER 8

ABSTRACTS

FIBERS A

NATURAL FIBERS A 1

Cotton technology and manufacturing practices in the Orient

E. E. Berkley (Anderson, Clayton and Co.). *Textile Research J. 24:* 594-596 (June, 1954).

Egypt, Pakistan, India, China, and Japan are briefly surveyed.

Influence of heavy beating of cotton fibers on molecule length and crystallinity

C. F. Wijnman. *Tappi 37, No. 3:* 96-98 (1954). Through *Brit. Cotton Ind. Research Assoc. 34:* 485 (June 30, 1954).

When purified cotton fibers are subjected to heavy beating in a mill, a large decrease in the degree of polymerization of the cellulose occurs, accompanied by a moderate reduction in the average size of the crystalline regions, and a small reduction in the degree of crystallinity. When dry cotton is ground to a fine powder most of the crystalline portion is destroyed.

Methods of selecting, blending, and cleaning cotton as practiced in European mills

L. Dexter (Pepperell Mfg. Co.). *Textile Research J. 24:* 587-589 (June, 1954).

Developments in European cotton processing methods

R. A. Rusca (Southern Regional Research Laboratory). *Textile Research J. 24:* 589-591 (June, 1954).

European textile mills are confronted with two problems which are not found, in general, in the United States. One is the necessity of using cottons from many countries, all packaged in high-density bales. The other is the practice of processing a multitudinous variety of yarns, manufactured to the customer's specifications. Competition is keen, and orders are accepted for small lots of yarns—sometimes as small as 500 lbs. These two problems have had a noticeable effect on mill equipment and processing methods. The labor situation also influences European machinery in that equipment is usually designed for maximum production per spindle, rather than per operator.

Quality requirements and cotton fiber procurement practices in Europe

G. W. Pfeiffenberger (Otto Goedecke Co.). *Textile Research J. 24:* 592-593 (June, 1954).

The American shipper has two tools with which he can fight foreign competition. He can offer cotton which is quality controlled from the original source through fiber specifications, and he can use the new methods of fiber testing to establish a confidential relationship with his European customers, in which the shipper will recommend and furnish qualities which will exactly fit the spinner's needs.

Some observations on European cotton research

H. Wakeham (Textile Research Institute). *Textile Research J. 24:* 584-586 (June, 1954).

The author discusses European research on fiber properties and laboratory test methods. 5 references.

Extraction of jute and jute substitute fibers. Part 2

J. G. Thieme. *Textile Quart. 4:* 119-124 (April-June, 1954).

26 references.

Mechanical characters of jute. Part 1. Filament length

K. R. Sen. *Jute Bull. 17:* 20-23 (April, 1954).

The importance of fiber length in jute processing is discussed. The author concludes that the divergence in lengths is much too wide to evolve any practical means of total fiber control. He suggests that future jute processing research may develop more even yarn by elimination of very short fibers.

Ramie. Part 4

B. Luniak. *Textile Quart. 4:* 92-100, 103 (April-June, 1954).

The degumming and textile processing of ramie are discussed.

Bilateral asymmetry of the distribution of melanin in pigmented wools and its correlation with fiber crimp

G. Laxer, C. S. Whewell and H. J. Woods (Leeds Univ.). *(Letter to the Editor). J. Textile Inst. 45:* T482-T486 (June, 1954).

Effect of ortho-chlorophenol on wool

H. M. Appleyard and C. M. Dymoke (Wool Industries Research Assoc.). *(Letter to the Editor). J. Textile Inst. 45:* T480-T482 (June, 1954).

Terminal carboxyl groups of wool keratin

S. Blackburn and G. R. Lee (Wool Industries Research Assoc.). *(Letter to the Editor). J. Textile Inst. 45:* T487-T488 (June, 1954).

Relaxation of stretched animal fibers. Part 2. The relaxation of human hair

G. C. Wood. *J. Textile Inst. 45:* T462-T471 (June, 1954).

Relaxation curves of human hair stretched 10-50 per cent in aqueous media have been determined. The time range of the experiments was 0-60 hours and the temperature range 14.9-34.7°C. The results indicate that two relaxation processes occur in a fiber stretched in water. One is rapid, contributes the major part of relaxation during the first 10 seconds after extension and is due to the breaking of secondary bonds; the other is a slower process which gives rise to relaxation over greater periods of time and is due to disulfide-bond fission. 15 references.

MAN-MADE FIBERS A 2

Development and use of chemical fibers

P. A. Schultz. *Melliand Textilber. 35:* 130-131 (February, 1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 426 (June 15, 1954).

In this brief review, the author compares the properties of super-polyamide fibers (nylon and Perlon), vinyl chloride and other vinyl or acrylo-derivative copolymers (Saran, Vinyon, Dynel, Rhovyl, and Pe-Ce), and polacrylonitrile (Orlon) and terephthalic acid ester fibers (Terylene, Dacron). Elasticity, resistance to rubbing, moisture and water-uptake are listed and other properties (resistance to fungi, mildew and bacteria, etc.) are pointed out, with reference to the respective uses of the fabrics.

The use of synthetic fibers

A. M. Baron. *Teintex 19, No. 3:* 169-181 (1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 461 (June 30, 1954).

In this review, the author discusses the development, production and consumption, application, general properties, stress-elongation curves, thermoplasticity, resistance to abrasion, and dyeing properties of synthetic fibers. A table is given to show the characteristics of the main fibers used in France, including: wool, cotton, silk, viscose, cellulose acetate, Rhovyl and Thermovyl, nylon and Rilsan, Terylene (Dacron), Orlon and Fiber D, and glass.

Viscose coagulation in relation to the production of crimped rayon filaments

B. C. M. Dorset. *Textile Mfr. 80:* 309-312 (June, 1954).

While structurally uneven viscose rayon filaments can be produced by using abnormal spinning solutions and coagulating liquors, it is possible to achieve the same result by mechanical variations in the spinning process. 5 references.

YARNS B

CARDING AND COMBING B 2

Cotton carding with metallic card clothing

J. W. Powischill (Proctor and Schwartz, Inc.) *Textile Research J. 24:* 541-543 (June, 1954).

This paper reviews some of the experiences of Proctor and Schwartz with the application of metallic card clothing to cotton cards.

Does metallic wire solve my carding problem?

R. C. Ashworth, Jr. (Ashworth Brothers, Inc.). *Textile Research J. 24:* 544-546 (June, 1954).

The history of the development of wire card clothing is traced and an average over-all picture is given of what can be expected from the installation of metallic wire on cotton cards.

Improvements in card operation

H. M. Brown and J. L. Thompson (Clemson College). *Textile Research J. 24:* 535-538 (June, 1954).

See *TTD 11:* 190 (May, 1954).

New development in card fillet

T. Pogson (Joseph Sykes Bros., England). *Textile Research J. 24:* 546-548 (June, 1954).

A brief survey of the development of modern card fillet technique.

Retracto-pin continuous card stripper

R. A. Rusca and G. A. Pettit (Southern Regional Research Laboratory). *Textile Research J. 24:* 539-540 (June, 1954).

In connection with research at the Southern Regional Research Laboratory on processing chemically treated cottons, it was found that the card

loaded so heavily that some out-of-the-ordinary method of stripping was required. The Retracto-Pin stripper was developed, and proved very successful for this purpose. The stripper also has promise as a practical device to aid the textile industry in processing raw cotton.

DRAWING AND ROVING B 3

Clemson pretwister for roving frames

H. M. Brown (Clemson College). *Textile Research J. 24:* 548-549 (June, 1954).

See *TTD 11:* 144 (April 1954).

From hand spinning to the Raper Autoleveller

H. Lemon (Wool Industries Research Assoc.). *Texture 1:* 209-213 (June, 1954).

The control of the movement of fibers in the drafting zone is traced from hand spinning through modern yarn uniformity research. The Raper Autoleveller for adjusting draft is briefly described. 9 references.

Influence of roller eccentricity on yarn regularity. Part 2

P. de Marsano. *Enka Breda Rayon Rev. 8:* 91-102 (June, 1954); *in Dutch.*

The previously published method for calculating the variance due to a given roller eccentricity at a certain draft has been simplified and condensed in one formula:

$$V=\left\{\frac{S \times \text{roving count} \times \text{eccentricity} \times \text{draft}^2}{\text{roller circumference}}\right\}^2 \times \frac{1}{12}$$

Tables are given in which the factors of increase of the normal irregularity due to the product of measured roller oscillation x draft for the counts 12's to 50's can be found. The application of the tables is discussed. The practical results correlate with the theoretical. 5 references.

SPINNING, WINDING, AND TWISTING B 4

Modified spinning systems for rayon and synthetic staples

H. Ashton (Courtaulds Ltd.). *Textile Merc. 131:* 15-22 (July 2, 1954).

Part 1, the progress of man-made staple fibers, discusses machinery modification (tables and diagrams). Part 2 takes up tow-to-top conversion systems.

Spinning metallic staple

Textile Ind. 118: 77-81 (July, 1954).

Processing tips are given for spinning metallic staple in blends on cotton and worsted spinning systems.

Features and adaptability of the woolen ringframe

J. A. B. Mitchell (Scottish Woolen Technical College). *Textile Mfr. 80:* 304-306 (June, 1954).

The ringframe, suitable for a wide range of materials, is also adaptable for a good range of counts spun direct from condenser slubbing. Yarns from 5 skein (carpets) to 40 skein (tweeds) are successfully produced on the continuous machine.

Spooler efficiency

N. H. Pomfret. *Textile World 104:* 102-103, 202-206 (July, 1954).

To increase efficiency on automatic spoolers (1) run uniform yardages, (2) keep tailings to a minimum, (3) don't run widely different yarn numbers at the same time and (4) keep machine in good adjustment.

Handbook of twisting. Chapter 2. Part 5. Twisting devices

N. Truslow. *Textile Bull. 80:* 75-78 (July, 1954).

Forming twisters, pot spinning, laying procedures and false twist are discussed.

Coning of synthetic yarns

Brugger and Co., Horgen, Switzerland. *Textile Wkly. 53:* 1902-1904 (June 25, 1954).

The Giroconer is an entirely new design of cone winder which produces cones wound with a minimum of tension but on which the yarn is so positively locked that there is no danger of sloughing.

GENERAL B 5

Fifty years of spinning improvements

H. Windfeld-Hansen (Denmark). *Texture 1:* 214-216 (June, 1954).

A general survey of processing machinery developments.

Handling filament yarns

E. D. White. *Textile World 104:* 116-117 (July, 1954).

Most mill processing of filament yarns is basically handling the yarn in and between machines. Here is a report from a tire-cord mill, where processing is practically all handling, on where and how defects are added to yarn.

Effect of single and ply twists on the properties of 31/2 and 15.5/2 carded cotton yarns

L. A. Fiori, J. J. Brown and J. E. Sands (Southern Regional Research Laboratory). *Textile Research J. 24:* 526-534 (June, 1954).

This paper is based on the findings presented in two articles published in the March and May, 1954, issues of *Textile Research Journal.* See *TTD 11:* 50, 193 (1954).

Investigation of the knot efficiencies of various yarns

R. E. Spielrein. *Textile Quart. 4:* 101-103 (April-June, 1954).

Knot efficiency tests have been carried out on a range of yarn types with the object of determining their relative merits when knotted and subjected to tensile stresses. In all instances knotting caused a reduction in strength. Wide differences in knot efficiency values between yarn types were observed. 8 references.

FABRICS C

WARPING, SLASHING, YARN PREPARATION C 1

Control of size take-up in slashing: the Shirley automatic size box

E. H. Jones (Shirley Institute). *Textile Research J. 24:* 562-571 (June, 1954).

The Shirley automatic size box enables the percentage of size put on any warp to be controlled at any value, irrespective of variations which occur in the take-up characteristics of the warp, the physical properties of the size, or the mechanical conditions imposed by the machine. This paper, as well as describing clearly the principle of the box, develops a simple mathematical analysis of the regulating system and shows how various factors affect its response rate. Good agreement is shown to exist between theoretical and observed response curves. The essential features of the components of the production model of the box are described in some detail, and some of the advantages to be expected from using the box correctly under industrial conditions are discussed briefly.

How to eliminate filament-fabric shadow streaks

W. P. Crawley (American Viscose Corp.). *Textile World 104:* 84-85, 184-186 (July, 1954).

Defects in filament-yarn fabrics known as shadow or pattern streaks may be caused by uneven slasher tension. To eliminate them, tension should be equalized so that yarn luster is constant.

Slashing equipment

R. B. Pressley. *Textile World 104:* 98-99, 206-208 (July, 1954).

New slashing equipment at Gold-Tex Fabrics Corp. raised weave-room production 2%. Its features are described.

WEAVING C 2

Crossing of threads in shedding

E. Bradbury and A. P. Worthington (British Cotton Industry Research Assoc.). *J. Textile Inst. 45:* T421-T437 (June, 1954).

Appeared previously in *Shirley Institute Memoirs.* See *TTD 11:* 149 (April, 1954).

Jute and linen weaving. Part 2. Chapter 10. Beating-up the weft threads

T. Woodhouse and T. Milne. *Textile Quart. 4:* 114-118 (April-June, 1954).

Needles instead of shuttles

Textile Ind. 118: 73-75 (July, 1954).

Production of narrow fabric webbing was doubled with a needle conversion on two C&K multi-shuttle looms which had been in operation since about 1930.

New German looms

Textile Wkly. 53: 1938-1942 (June 25, 1954).

A brief review of the special features of a number of new German looms.

Shuttle propulsion. Part 4

A. T. C. Robinson. *Skinner's Silk and Rayon Record 28:* 733-734 (July, 1954).

The author deals with shuttle checking and some of the various devices available for this purpose.

Temple brackets

W. Middlebrook. *Textile Mfr. 80:* 298-299, 318 (June, 1954).

A description of the various types including the Northrop, Hattersley and Livesey temple brackets, vertical spring and coiled spring brackets and double-bar temples.

Tools for fixing looms

W. C. Westbrook. *Textile World 104:* 114-115 (July, 1954).

Poor tools and careless loomfixer methods go together. For good loomfixing, worn tools should be discarded and replaced with special tools for easily and quickly setting looms to the gauges

that are now a part of every good loomfixer's equipment.

Weaving operations

R. B. Pressley. *Textile World 104:* 91-93, 182-183 (July, 1954).

Chatham Mfg. Co., Elkin, N. C., keeps in top weaving condition with diversified equipment to weave any type of woolen cloth, constantly trained fixers to keep the equipment operating, and on-the-job follow-up by supervisors.

Weaving quality repps

Textile Ind. 118: 92-93 (July, 1954).

Inspection program for weaving quality silk or synthetic repps.

Weaving quality towels

R. B. Pressley. *Textile World 104:* 77-79, 181-182 (July, 1954).

Callaway Mills uses these methods: (1) loom speeds are kept low for better weaving, (2) jobloads give employees time to check woven cloth, (3) weavers' bonus places premium on good cloth, (4) gray and finished-towel inspection keeps quality high.

KNITTING C 3

How to knit colored patterns on Komet hosiery machines

C. E. Martin and C. N. Lawing. *Textile World 104:* 96-97 (July, 1954).

Better results can be obtained on Komet links-and-links machines to obtain more fancy patterns by brazing plaiting fingers together and using correct yarns and tensions.

Knitting elements

K. A. Hahn. *Textile World 104:* 110-111, 202 (July, 1954).

The fitting and maintenance of needles, narrowing points, sinkers and dividers, and knock-over bits are discussed.

Knitting 400-needle nylons

D. Tims. *Textile Ind. 118:* 111-112 (July, 1954).

A brief account of practices at a number of mills.

Principles of knitting

J. C. H. Hurd. *J. Textile Inst. 45:* P275-P289 (June, 1954).

The development of the modern knitting machine from that invented by William Lee in 1589 is outlined. The principles of the knitting action of the four main types of machine are very briefly described, stress being laid on the controlling features governing the actual length of the knitted loop.

Principles of weft knitting. Part 14. Fully-fashioned hose manufacture

S. B. Bradley. *Brit. Rayon and Silk J. 31:* 52-54 (June, 1954).

Increasing the rate of machine production and modified leg blanks and heeling are discussed.

GENERAL C 4

Study in 3-fiber blends

J. F. Sayre and A. J. Weldon. *Modern Textiles Mag. 35:* 32-33, 41-44, 52-53, 68 (July, 1954).

The individual contributions of Dacron, Orlon, and rayon in a 3-fiber blend are analyzed and presented by means of tables, graphs and three dimensional models. Dacron in blends contributes outstanding improvement in properties such as strength, abrasion resistance, crease recovery and dimensional stability. These advantages are tempered somewhat by negatives in pilling and sensitivity to hole melting. Orlon is superior to older man-made fibers such as rayon in many important respects, which include bulk, crease recovery, dimensional stability and press retention. It has few negatives of any consequence, none among the characteristics studied here. It provides outstanding aesthetic value, such as softness of hand and pleasing texture. Rayon, when blended with the synthetic fibers as a minor component, is very compatible and is effective in counteracting certain of their deficiencies; for example, static, pilling and hole melting. 50 percent or more of the newer synthetic fibers is required for effective realization of their advantages. The best combinations of the three fibers studied here will contain approximately 60-85 percent of either or both synthetic fibers with 15-40 percent of rayon.

British method produces new bonded fiber fabric

Bonded Fiber Fabric Ltd. *Am. Textile Reptr. 68:* 121 (July 15, 1954).

This new material is made entirely of cellulose. It is not spun, woven or knitted; but, although it is held together with a bonding agent (itself

a cellulose product like the web), it is claimed to be a satisfactory alternative to woven fabrics for many industrial purposes, and costs substantially less.

Cloth setting reconsidered. Part 9

S. Brierley. *Textile Mfr. 80:* 307-308 (June, 1954).

The settings of backed and double cloths of the same degree of weaving firmness can be calculated from single cloth settings by making the necessary reduction to be allowed according to the method and frequency of stitching.

Cotton and ideal military textiles

S. J. Kennedy (U. S. Office of the Quartermaster General). *Textile Research J. 24:* 572-577 (June, 1954).

A general survey of the fiber needs of military textiles and the place of the cotton fibers.

New shrink-resist process for wool

Stevensons Dyers Ltd. *Textile Wkly. 54:* 20 (July 2, 1954).

The Dylan alkaline treatment is briefly described. In the U. S. A. it has the trade mark Sanforlan. The process is covered by British Patent 569 730.

Stabilizing viscose fabrics

L. L. Walmsley (American Viscose Corp.). *Am. Dyestuff Reptr. 43:* P412-P415 (June 21, 1954).

The author explains six methods for stabilization and discusses each.

Backsizers

M. London. *Textile World 104:* 125 (July, 1954).

McBride backsizers installed at the Archibald Holmes and Son plant help maintain efficient production of quality carpeting material. Carpet widths up to 15 feet are backsized at speeds up to 10 feet per minute.

FINISHES D

WET PROCESSES D 1

Tar spot removal from cotton fabrics during finishing

J. Compton and L. R. Hubbard (Institute of Textile Technology). *Textile Research J. 24:* 578-583 (June, 1954).

The tar spot removal problem is discussed in three phases: (1) appearance of cotton yarns and fabrics contaminated with tar and asphalt, (2) removal of tar spots from cotton goods after finishing, and (3) removal of tar spots from cotton goods during finishing. 3 references.

Modern continuous bleaching range

Textile Age 18: 28-34 (July, 1954).

The modern bleaching range recently installed at the Hawkinsville Division of the Opelika Manufacturing Corporation is described in detail. Layout and wiring diagrams. Photographs.

Keeping dry under cotton

K. L. Baringer, H. A. Schuyten and C. F. Goldthwait (Southern Regional Research Laboratory). *Textile Ind. 118:* 102-105 (July, 1954).

A discussion of work at the Southern Regional Research Laboratory to improve cotton's resistance to penetration by rain and other water. 11 references.

DYEING AND PRINTING D 2

Astrakhan fabrics: chrome colors on mohair pile

Dyer 112: 31-32 (July 9, 1954).

Methods of overcoming difficulties of penetration, leveling, matching, and the production of blacks are discussed.

Beam dyehouse

M. London. *Textile World 104:* 106-107 (July, 1954).

Avondale Mills' newest dyehouse turns out 150,000 lbs. of beam-dyed yarn a week. Its features include (1) automatically controlled dyeing cycle, (2) efficient dye-inventory control, and (3) over 700 different colors run. An operator's instruction sheet is reproduced.

du Pont Jackson Laboratory package dyer

R. H. Blaker and T. W. Stricklin. *Am. Dyestuff Reptr. 43:* 392-393 (June 21, 1954).

The DuPont Jackson Laboratory package dyer is a laboratory dyeing machine designed to dye 50 to 100 grams of fiber at temperatures up to 300°F. The novel design permits dyeings to be made under a variety of conditions. The machine has been particularly useful in making routine dyeings during the development of dyeing procedures for the new synthetic fibers. Photographs and diagrams.

Dyeing and finishing Orlon acrylic fiber

R. F. Stevens (E. I. duPont de Nemours and Co.). *Am. Dyestuff Reptr. 43:* P409-P411 (June 21, 1954).

With the current production of Type 42 Orlon acrylic fiber, the problem of dyeing Orlon has been considerably eased. In the present paper the author not only discusses the application of various dye classes to this fiber alone with or without pressure, but he especially treats of the practical dyeing of Orlon in various forms, such as stock, package yarn, top, and different knitted textiles. The dyeing of blends of Orlon with wool and rayon is also explained. The paper ends with directions for bleaching Orlon.

Dyeing blends of Dacron polyester fiber, nylon and acetate

DuPont Tech. Bull. 10: 63-70 (June, 1954).

A laboratory study was undertaken to obtain information and to provide a convenient reference for those considering dye application to blends of Dacron, acetate and nylon. Experimental data and tables are presented.

Dyeing of cotton with indigo

J. T. Turner. *Hexagon Digest No. 18:* 3-24 (April, 1954).

A survey of the properties of indigo, modern methods of dyeing, and an account of local indigo dyeing practice in China and the Near East.

Economics of glass hoods on dye vessels

L. Walter. *Textile Bull. 80:* 87-88 (July, 1954).

The author claims that the use of glass hoods, or of armor-plated glass and metal hoods, in combination with insulation of metal walls of dye vessels pays for itself within a few months time, and continuous savings of heat and fuel result afterwards. A fuel saving chart is presented.

Fast shades on spun rayons

P. A. Holt (Bradford Dyers Association, Ltd.). *Dyer 111:* 981-989 (June 25, 1954).

Various methods of applying vat dyes to spun rayon are discussed.

Metal complex compounds in cotton dyeing

R. Paltzer. *Z. ges. Textil-Ind. No. 13:* 799-802 (1953). English summary in *Am. Dyestuff Reptr. 43:* 395 (June 21, 1954).

Pigment printing and dyeing

G. Bertolina (Societé Rhodiatoce, Italy). *Dyer 111:* 991-999 (June 25, 1954).

A versatile technique for rayon and mixed fibers is described.

DRY PROCESSES D 3

Dry finishing equipment for new blends

M. T. Fleming. *Can. Textile J. 71:* 51-57 (July 16, 1954).

Blends, fiber characteristics, finishing equipment, finishing techniques for Orlon, Dynel, Acrilan, Dacron, and Vicara, and finishing techniques for nylon hosiery are discussed. The slides shown when this paper was presented are not included. References.

Heat setting synthetic fiber fabrics

Skinner's Silk nd Rayon Record 28: 726-727 (July, 1954).

A brief general survey of heat setting problems and processes.

Resin curing

M. London. *Textile World 104:* 100 (July, 1954).

Far-infrared heat at 1000°F., combined with predrying on cans and an air dryer, makes possible a quick resin cure without surface migration at Northern Dyeing Corp.

GENERAL D 4

Bengalines and screen prints

Rohm and Haas Rptr. 12: 1-7 (May-June, 1954).

Screen printing (Castle Creek Prints, Inc.) and bengaline finishing (Northern Dyeing Co.) are described.

Modernized finishing plant

M. London. *Textile World 104:* 94-95, 176-181 (July, 1954).

Finishing equipment at Chatham Mfg. Co. is described.

Unusual stability in Dynel-rayon blended fabrics

Am. Textile Reptr. 68: 51-53 (July 15, 1954).

Finishing procedures used on Dynel-rayon blend dress fabrics at Fair Lawn Finishing Company are briefly described.

TESTING AND MEASUREMENT E

FIBERS E 1

Detection of regenerated protein fibers in wool blends

J. N. Banks (School of Textiles, East Sydney Technical College, Australia). *Textile Mfr. 80:* 313 (June, 1954).

Details are given of a chemical test which will detect all types of manufactured protein fibers. 3 references.

Measurement of the nepping potential of cotton

J. F. Bogdan. *Textile Research J. 24:* 491-494 (June, 1954).

The Nepotometer, an instrument for predicting the nepping potential of cotton, is described.

Measuring cotton fiber strength at finite gage lengths in the breeding program

T. Kerr (U. S. Department of Agriculture). *Textile Research J. 24:* 507-510 (June, 1954).

Fiber strength is a complex property, and any one measure, such as that made with the Pressley breaker, has arbitrary limitations. Evidence has been presented showing that the limitations of the Pressley breaker are such that values obtained with this instrument do not give the best measure of the contribution of fiber strength to yarn strength. The author is impressed by the simple correlation between the bundle strength at 1/8-in. gage length and yarn strength, and feels that it is possible to account for as much of the variability in skein strength with this simple correlation as it is with the involved multiple correlations previously used.

Method of determining the nep content of ginned lint by using accessory equipment with the mechanical fiber blender

J. T. Rouse (U. S. Agricultural Marketing Service). *Textile Research J. 24:* 498-502 (June, 1954).

Two technicians can test an average of four samples an hour by this method, using relatively simple equipment and a small sample of cotton. The results of such tests are also slightly more significant in explaining spinning behavior than the results of neps in card web employing commercial-type, textile-processing machines.

YARNS E 2

Investigation methods for textile materials. Part 6. Determination of bone-dry strength- and elongation-values of rayon tire cord

A. van Gijzen. *Enka Breda Rayon Rev. 8:* 103-107 (June, 1954); *in Dutch.*

For the determination of the bone-dry strength of tire cord a suitable auxiliary apparatus was developed. A detailed description, illustrated by a series of photos, is given of the working method followed by AKU. From some examples it appears that there is no fixed ratio between the air-dry and bone-dry strength of tire cord.

Investigation methods for textile materials. Part 7. The determination of the regularity of the shrinkage of yarns

J. Lako. *Enka Breda Rayon Rev. 8:* 110-116 (June, 1954); *in Dutch.*

The importance of the shrinkage-determination of the regularity of the shrinkage is discussed. A detailed description is given of an apparatus constructed by the instrument workshop of N.V. Research. This construction is such that it enables us to accurately determine the shrinkage and the regularity of the shrinkage of widely different yarns. A description is also given of the way in which the determinations are carried out.

Relaxation of stress in stretched cellulose fibers

R. Meredith (British Cotton Industry Research Assoc.). *J. Textile Inst. 45:* T438-T461 (June, 1954).

Appeared previously in *Shirley Institute Memoirs.* See *TTD 11:* 165 (April, 1954).

Simple method of comparing the breaking loads of two yarns

S. L. Anderson (Wool Industries Research Association). *J. Textile Inst. 45:* T472-T479 (June, 1954).

A simple method is described, requiring no strength-testing machine, for deciding which of two yarns is the stronger. The method may also be extended to give an approximate estimate of the ratio of the mean strengths.

Tension analyzer measures static or running load

Brush Electronics Co. *Textile World 104:* 132 (July, 1954).

The Brush Tension Analyzer is a mobile unit for measuring and recording instantaneous tension loads in filament yarns. It will measure static

tension levels and dynamic tension variations while material is running at high production speeds. Tension range is 4 to 400 grams full scale.

FABRICS E 3

Use of metal tubes in the Launder-Ometer for the dynamic absorption test

G. J. Mandikos (Lowell Technological Institute). *Am. Dyestuff Reptr. 43:* P402-P404 (June 21, 1954).

The author has proven experimentally that the use of the Launder-Ometer, employing the 8-inch metal tubes, produces results which agree very closely with those of the original AATCC dynamic immersion absorption test. This was made possible by selecting optimum conditions, such as volume of water, number of steel balls, and size of fabric. This test is now under consideration by the AATCC Committee on Water Resistance of Fabrics as an alternative method.

GENERAL E 4

Fiber and yarn evaluation equipment

Karl Frank GmbH, Germany. *Skinner's Silk and Rayon Record 28:* 722-723 (July, 1954).

The type AEG-Frank No. 678 single fiber testing apparatus, the Motoperm tensile strength tester, and a special drying cupboard which permits a yarn carrier to be suspended in it from an external balance arm are described.

German tensile strength and abrasion testers

Textile Wkly. 54: 30 (July 2, 1954).

Several testers are briefly described.

Product data used by worsted mill

Textile Ind. 118: 82-85 (July, 1954).

Description of a testing program set up by U. S. Testing Company, Inc., for Palmetto Worsted Mills.

Statistical methods in textile research [Statistische Methoden bei textilen Untersuchungen]

U. Graf and H.-J. Henning. Berlin, Springer Verlag, 1952. 278 p. *In German.*

A presentation of the following statistical techniques as applied to textile examples: significance testing of averages and dispersions, analysis of variance, the t-test, chi-square tests, Poisson distribution, correlation theory, control charts and sequential sampling. There is a bibliography and index.

INDUSTRIAL ENGINEERING F

MACHINERY AND MAINTENANCE F 1

Automatic control. Part 1

C. G. Booy. *Enka Breda Rayon Rev. 8:* 120-124 (June, 1954); *in Dutch.*

This article opens a discussion on the problems playing a part in the choice, the arrangement and the use of automatic controllers. After explaining the various parts of a control circuit and their functions, the author discusses the pneumatic on-off controller.

Electrical equipment brought up to date

W. L. Roark, Jr. *Textile World 104:* 118-119, 183-184 (July, 1954).

New machines and processes at the various plants of Avondale Mills brought the need for better electrical equipment. Here's the way the Electrical Engineering Department solved its problems.

Parts cleaning speeds machine-maintenance program

L. Thompson. *Textile World 104:* 104-105 (July, 1954).

The production departments, supply room, and maintenance department work together at Inman Mills, Inman, S. C., to keep production machines in good mechanical condition. There is no skimping on the use of new machine parts when they are needed, but the maintenance department rebuilds many parts. The program is described briefly.

Textile calculations. Part 12

N. C. Gee. *Textile Mfr. 80:* 279-282 (June, 1954).

Worked examples and exercises concerning machinery speeds and driving efficiencies where line shafts, belts or gearing are employed.

Three improved fuses protect electric motors

J. C. Lebens. *Textile World 104:* 112-113 (July, 1954).

Old types of fuses are no longer adequate to

protect the increased capacity of electrical systems supplying the average modernized textile plant. The new types of fuses protect both machinery and motors and also eliminate costly and unnecessary shutdowns.

PRODUCTION F 2

Summary graphs

R. H. Coon and D. M. Veal, Jr. (Fulton Bag and Cotton Mills). *Textile Ind. 18:* 94-101 (July, 1954).

Summary graphs show mill operating conditions in simplified form. They can be plotted for any process or operation within the mill for which data are available and for which a standard value has been established. They are maintained at Fulton Bag and Cotton Mills for the following values: (1) end breaks per 1000 spindle hours, (2) per cent spooler reties and spooler strips, (3) warper end breaks per million linear yards, (4) stops per loom per hour, (5) total mill wastes, (6) comparison of waste reported and waste baled, (7) weaving efficiency, (8) cloth quality, and (9) cloth weight.

QUALITY AND WASTE F 3

Controlling the control laboratories

J. H. Reynolds (Celanese Corp.). *Ind. Quality Control 10:* 12-17 (July, 1954).

Discusses the principal requirements, such as written instructions, scheduled checking of equipment, use of statistical analysis of causes of variation and corrective action where indicated, in the control of quality and uniformity of laboratory testing.

Statistical aids in locating machine differences

S. Vaswani (Ahmedabad Textile Industries, India) and E. R. Ott (Rutgers University). *Ind. Quality Control 10:* 52-53 (July, 1954).

Four methods of analysis are furnished, utilizing an example of end breaks in spinning, for the detection of significant differences among spinning frames. These methods are: (1) ordinary Poisson, (2) control chart based upon the statistical Poisson distribution, (3) analysis of variance, and (4) chi-square analysis. Techniques (2) and (3) are similar to those described some time ago in Institute of Textile Technology Report No. 5, *Statistical Quality Control of Textile Processing* (see *TTD 11:* 73 (February, 1954)).

GENERAL F 4

Application of chlorine and treatment of textile wastes

N. S. Chamberlin (Wallace and Tiernan Inc.). *Am. Dyestuff Reptr. 43:* 389-391 (June 21, 1954).

The author enumerates and discusses the important mechanical and chemical tools employed in the chemical precipitation of textile wastes, and further suggests the chemical tools for the chemical precipitation of a possible combination of wastes.

Mill of the future. Part 1. Modern cotton mill design

H. S. H. Hoshour, F. C. Vigier and J. W. Smith. *Textile Age 18:* 18-21 (July, 1954).

Services

Plant Location Studies
Investigation of Sites
Plant Layouts
Design of Buildings and Services
Design of Power and Steam Plants
Supervision of Construction
Economic Studies and Reports
Appraisals

LOCKWOOD GREENE

Engineers · *Architects*

Boston 9, Mass.
40 Central Street

New York 20, N.Y.
10 Rockefeller Plaza

Spartanburg, S.C.
Montgomery Building

OVER 120 YEARS OF SERVICE
IN TEXTILES

Part 1 in a series of textile mill designs done by a group of students in the School of Architecture at the Massachusetts Institute of Technology. These designs were submitted in a contest sponsored by the National Association of Cotton Manufacturers. Illustrations include floor plans, cross sections, and models.

SCIENCES G

CHEMISTRY G 1

Alkylation of cellulose with esters of p-toluenesulfonic acid

J. W. Weaver, C. A. Mackenzie and D. A. Shirley (Southern Regional Research Laboratory). *Ind. Eng. Chem. 46:* 1490-1493 (July, 1954).

The topochemical conversion of cellulosic textiles to ethers of cellulose often confers interesting properties. Carboxymethylated fabrics are soluble in alkali, aminoethoxycellulose has the dyeing characteristics of wool, and etherification with the stearamidomethyl group produces a water-repellent textile. Esters of *p*-toluenesulfonic acid have been used as alkylating agents for many types of organic compounds, but the literature contains no information concerning the preparation of ethers of cellulose with these reagents. This preliminary work establishes the optimum conditions for the methylation of cellulose with methyl *p*-toluenesulfonate and the alkylation with other esters under these conditions. The reactivity of the *p*-toluenesulfonates with alkali cellulose was found to diminish as the length of the alkyl group increased. The ethyl and propyl ethers were prepared, but the butyl and phenyl esters were ineffective as etherification agents for cellulose. 13 references.

A comparison of the cupriethylene diamine and the cuprammonium hydroxide methods for the determination of the viscosity of dispersed cotton cellulose

H. Cikurel. Thesis for M. S. in Textile Chemistry and Dyeing, North Carolina State College, Raleigh, N. C., 1952.

Determination of the soil-suspending power of detergent-active substances

H. Stupel. *Textil-Praxis 9:* 264-268; 364-367 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 449 (June 15, 1954).

In this review, the author discusses the definition of soil-suspending power, existing methods of determination and constant and variable experimental conditions, and describes experiments in which suspensions or dispersions of artificial standard soils were diluted to 100 ml. with water at 20°C and applied to test strips, the detergent being added carefully. The strips were washed for 60 minutes (when an equilibrium between fiber and wash-liquor takes place and the degree of greying reaches its maximum) in a mechanically agitated washing machine at 95°C, rinsed with water at 40°C, air-dried and ironed, and their whiteness degree was optically evaluated. Among the artificial soils examined, the pure carbon pigments were found the most satisfactory, the best results being obtained with Standard Micronex. The hardness formers of the water and, in addition to the permanent hardness, the calcium:magnesium ratio play an important role. The best soil-suspending values are obtained at pH 7. 51 references.

Free energy of formation of the amide bond in polyamides

A. B. Meggy (University of Leeds). *J. Appl. Chem. 4:* 154-159 (April, 1954).

Although the manufacture of synthetic fibers from polyamides has been an established commercial process for 15 years, there are, to the author's knowledge, no publications dealing with the fundamental reaction of the process, the condensation of a carboxyl and an amino group to form an amide group, with the loss of a molecule of water, and the relationship between this and the degree of polymerization attainable under various conditions. This paper is an attempt to treat the problem by the classical methods of thermodynamics. 9 references.

The hydrolysis of cellulose. Part 1. The fine structure of Egyptian cotton

A. Sharples (British Rayon Research Assoc.). *J. Polymer Sci. 13:* 393-401 (April, 1954).

The kinetics of chain degradation have been studied for the heterogeneous hydrolysis of Egyptian cotton under mild acid conditions. The results have been interpreted to give estimates of accessibilities free from the defects associated with former measurements. The amount of accessible material in the undegraded cotton was found to be 10.8%, but during hydrolysis this is

reduced to less than 5%. The recrystallization takes place at an early stage in the degradation, starting at a point when approximately one-eighth of the intercrystalline chain segments have been broken. 15 references.

Improvement of the dirt-suspending power of carboxymethyl cellulose

K. J. Nieuwenhuis. *J. Polymer Sci. 12:* 237-252 (January, 1954). Through *J. Soc. Dyers Colourists 70:* 157 (April, 1954).

The salts of carboxymethylcellulose (CMC) owe their dirt-suspending power to the fact that they are absorbed from aqueous solution by cellulose. To exert their greatest effect their degree of substitution should be about 0.5, the substitution should be as uniform as possible and the cellulose chains should be neither too short nor too long. 41 references.

Linear polymerization and synthetic fibers

R. W. Moncrieff. *J. Chem. Educ. 31:* 233-237 (May, 1954).

The background of synthetic fibers is developed through an explanation of the chemistry of linear polymerization.

Polyaminotriazoles as fiber-forming materials

J. W. Fisher (British Celanese Ltd.). *J. Appl. Chem. 4:* 212-219 (April, 1954).

A new series of condensation polymers, the polyaminotriazoles, are described. These are made most simply by condensation of aliphatic dihydrazides in the presence of excess of hydrazine. The polymers are fiber-forming and can be melt-spun to give filaments which, after drawing, possess high strength and good affinity for dyestuffs of the acid and S.R.A. types, i.e. disperse types, as used for cellulose acetate rayon. 9 references.

The synthesis and applicability of block and graft copolymers

H. F. Mark. *Textile Research J. 23:* 294-298 (May, 1953).

Block and graft copolymers can act much like synthetic detergents, one molecule taking the place of several micelles of a detergent. Applications of such copolymers would be in the surface treatment of fibers and films in producing water-repellency or adhesion and in reducing mechanical friction or static charges. references.

Water, detergent, dirt

H. Reumuth. *SVF Fachorgan Textilveredlung 9:* 111-119 (March, 1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 486 (June 30, 1954).

Interrelation of these three factors is microscopically investigated and demonstrated in photomicrographs.

PHYSICS G 2

Electrokinetic potentials of textile fibers in solutions of normal electrolytes and surface active compounds

M. V. Stackelberg, W. Kling, W. Benzel, and F. Wilke. *Kolloid-Z. 135:* 67-80 (February, 1954); *in German.* Summary in *Brit. Cotton Ind. Research Assoc. 34:* 399 (May 31, 1954).

Electrostatic phenomena in textiles

F. Ecochard. *Rayonne et Fibres Synthet. 10, No. 3:* 85-91 (1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 398 (May 31, 1954).

The author reviews some observations concerning the theory of electrostatic phenomena in textiles under the following headings: origin of electric charge, general remarks regarding the observed phenomena, and classification of the textile fibers with respect to their electric charges. Reference is made to the promising patent of the Société Rhodiaceta (Fr.P. 966 128) relatnig to the mutual electrostatic neutralization by using suitable mixtures of fibers with different electric charges.

Laws of static friction

H. G. Howell (British Rayon Research Assoc.). *Textile Research J. 23:* 589-591 (August, 1953).

The relation $F=a\,R^n$ between frictional force and normal reaction is found to hold for fibers, and the friction index, n, lies between 0.80 and unity. The meaning of this relationship is discussed in terms of the cohesion theory of friction. 4 references.

Occurrence, behavior and elimination of static on textiles

R. D. Fine (Atlas Powder Co.). *Am. Dyestuff Reptr. 43:* P405-P408 (June 21, 1954).

After explaining the mechanism by which charges of static electricity accumulate on textiles, especially on those that are hydrophobic, the author discusses their elimination by grounding, air ionization, humidification, and application of chemicals. The chemicals for this purpose can be divided into inorganic salts, nonionics, cationics, anionics, and ampholytes. The selection and evaluation of chemical antistatic agents on yarns and fabrics by very simple laboratory procedures not involving the use of instruments is the most valuable part of the paper. It is also shown how precision methods can be used for the evaluation of antistatic agents and methods.

Static problems affecting knitting

C. H. Edwards. *J. Textile Inst. 45:* P248-P257 (June, 1954).

A general discussion of the nature of static, textile applications, and the control and removal of static.

BIOLOGY G 3

Funginertness of internally plasticized polymers

W. H. Stahl and H. Pessen. *Modern Plastics 31:* 111-112 (July, 1954).

This discussion, although applicable in principle to bacteria as well, is confined to fungi or molds as perhaps the most important organisms that are involved in the degradation of plasticizers. A table is presented showing the funginertness of 7 internally plasticized polymers. 7 references.

Moth damage to fabrics made from mixtures of fibers

S. Wolf. *Faserforsch. u. Textiltech. 5, No. 2:* 68-77 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 403 (May 31, 1954).

Feeding experiments with loose wool/chemical fiber mixtures showed that the amount of chemical fibers, eaten by the grub of the clothes moth in presence of wool, depends upon the nature and properties of the chemical fibers used in the mixture and upon the method of preparation and treatment of the fibers. It was possible to determine the order of relative preference of the chemical fibers tested; since the relative preference depends to a great extent upon the tensile strength of the fiber, conclusions can be drawn, from the extent of the damage, as regards the strength properties, particularly shearing strength, and the elastic and plastic behavior of the fiber. Generally, artificial cellulose fibers (cuprammonium, acetate, and viscose) are preferred to polyvinyl chloride, polyamide, polyacrylonitrile, and, especially, polyester fibers. Mixed yarns, from wool and cellulose staple fiber, or cellulose staple and polyamide fibers, are attacked almost uniformly, but when separated into loose mixtures, the preference for one or the other material becomes evident.

Tight-lock of cotton, associated fungi and pH values in South Carolina in 1952

C. H. Arndt. *Textile Research J. 23:* 533-535 (August, 1953).

Results of tests to determine pH values of cotton and fungi found on it are given and discussed. 5 references.

MISCELLANY H

Coordination of science, sales activities

E. L. Kropa. *Ind. Laboratories 5:* 89-95 (July, 1954).

A summary of a paper presented at the Fourth Annual Conference on Industrial Research, sponsored by Columbia University. The coordination of four quadrants of science and sales functions is explored: the area of the trader (available market, available product), the sales aspect of research (available market, no product), the research aspect of sales (available product, no market), and the realm of the useless (no product, no market). The article brings out why much of research activity is apparently visionary, giving the impression of confusion, uncertainty and doubt. This is an unavoidable situation, but research is also "an organized method of keeping you reasonably dissatisfied with what you have," and through proper management handling it is the aid which helps an organization to avoid the dangers of becoming static.

Chemicals by the yard

Chem. Week 74: 99-102 (May 15, 1954).

Statistics showing a serious drop in fiber shipment poundage for the first quarter of 1954 are analyzed in their relation to the textile chemical and dye industry.

Cost structure in wool textiles

A. P. Zentler and D. Ryde. *Textile Merc. 130:* 729-732,736 (April 23, 1954).

This article presents in non-technical terms the summarized results of research on the cost structure of wool textiles carried out by the Economics Department of the International Wool Secretariat. The full report was published in English in the February 1953 issue of *Economica.* The purpose was to find means of calculating the effect of changes in raw material costs on the price of finished and semi-finished goods in the absence of information on the *actual* costs of a representative sample of manufacturers.

Cotton Research Clinic. Part 2

Textile World 104: 94-97,178-186 (May, 1954).

This second section of the fifth annual Cotton Research Clinic, sponsored by the National Cotton Council, digests papers on two new instruments to predict neps, effect of gauge length on fiber strength and effect of fiber strength on processing and yarn, ply twist, and how to remove tar spots from fabrics.

Idea mine for consulting engineers

H. Olken. *Consulting Engr. 3:* 34-36 (May, 1954).

A discussion of publications available from the two billion dollar federal research program, each year, and how to make use of them in business and consulting work. These publications are available through the U. S. Office of Technical Services.

The language problem of science

J. E. Holmstrom. *Research 7:* 190-195 (May, 1954).

The language barrier is one of the greatest obstacles in the dissemination of science and a current need is for a greater number of reliable translations. Dr. Holmstrom enumerates the main difficulties met in technical translating. As a long term policy, he suggests that scientists should perhaps be encouraged to learn more languages or that the adoption of a universal language might be feasible.

Textiles and dyestuffs at the Frankfort Fairs

Ciba Rev. No. 103: 3690-3714 (April, 1954).

A history of textile fairs in Frankfort, Germany. A table is included showing present-day industrial fairs of interest to the textile and allied trades. The table is arranged by country. 16 references.

Total evaluation of consumer apparel

D. Foster (United States Testing Co.). *Can. Textile J. 71:* 61-65 (May 7, 1954).

The author defines the term psychometrics which has been applied to the special measurement of industrial products. Some facts about apparel measurement, systematic physical research, and consumer likes and dislikes are discussed.

Textile education

Modern Textiles Mag. 35: 32-33,42-59 (June, 1954).

This series of articles on textile education discusses present-day college-level textile education at Philadelphia Textile Institute, Clemson College School of Textiles, New Bedford Institute of Textiles and Technology, North Carolina State College School of Textiles, Texas Technological College, Rhode Island School of Design, Georgia Institute of Technology, Lowell Technological Institute, and Bradford Durfee Technical Institute.

Continental report: the Hanover Fair

Brit. Rayon and Silk J. 30: 56-63 (May, 1954).

Notes on textile machinery exhibits by German, British, Belgian, French, and Swiss exhibitors at the Hanover Fair in Germany in May, 1954. Items are arranged alphabetically by firm name. Numerous photographs.

Textile machinery at the Hanover Fair in Germany

Textile Recorder 72: 93-105 (June, 1954).

Classified arrangement of descriptions of machinery exhibited by German, Swiss, French, Belgian, Austrian, etc., manufacturers. Numerous photographs.

What was new at the Atlantic City Show

Textile World 104: 79-108 (June, 1954).

Textile World presents brief descriptions of new or improved products not shown before in a major textile exhibition. Improvement trends are to higher speeds, more versatility, better appearance, and larger packages.

PATENT CHECKLIST

U. S. Patents may be obtained from the U. S. Patent Office, Washington 25, D. C., for 25 cents per copy. Photostatic copies of foreign patents are available. Charges for these photostats are based on the number of pages in the patent.

FIBERS A

MAN-MADE FIBERS A 2

Heat insulating Dacron filler

E. R. Frederick (to United States of America). USP 2 684 337, July 20, 1954.

GENERAL A 3

Apparatus for packing loose materials, particularly fibrous materials

E. Rothwell (to Henry Wheatley and Sons, Ltd.). USP 2 684 802, July 27, 1954.

Crimped synthetic fiber yarns

Heberlein and Co. AG. BP 707 859, April 21, 1954. Summary in *Brit. Rayon and Silk J. 31:* 84 (June, 1954).

Method and apparatus for processing fibrous materials

R. W. Schultz (to Owens-Corning Fiberglas Corp.). USP 2 684 107, July 20, 1954.

YARNS B

CARDING AND COMBING B 2

Fly prevention for cards

H. W. Griswold (to Chicopee Mfg. Corp.). USP 2 683 901, July 20, 1954.

Machinery guard for textile combing and other machines

D. Pierrepont (to T.M.M. (Research) Ltd.). USP 2 683 516, July 13, 1954.

Method and a device for compensating weighing faults in feeders for carding machines

O. E. Sandelin (Sweden). USP 2 683 289, July 13, 1954.

Stripping cylinder

H. C. M. H. Duesberg (Belgium). USP 2 684 505, July 27, 1954.

DRAWING AND ROVING B 3

Drafting apparatus for textile fibers

J. Noguera (to Casablancas High Draft Co. Ltd.). BP 698 146, October 7, 1953.

Drafting devices or heads for long staple textile fibers

A. Hoffmann (Germany). BP 700 221, November 25, 1953.

Draw box roll weighting mechanism

A. D. Harmon (to the Terrell Machine Co.). USP 2 683 291, July 13, 1954.

Fiber condensing means for use in preparatory and spinning machines

J. Noguera (to Casablancas High Draft Co. Ltd.). USP 2 683 290, July 13, 1954.

Means for supporting and loading the top rollers of textile drafting apparatus

J. J. Haythornthwaite and J. Calvert (to T.M.M. (Research) Ltd.). BP 698 958, October 28, 1953.

SPINNING, WINDING, TWISTING B 4

Automatic multiple spindle machine

E. Kohring (to Alfred H. Schutte, Germany). USP 2 683 918, July 20, 1954.

Creels or bobbin frames for spinning machines

E. Balmes (Spain). BP 700 225, November 25, 1953.

Device for the production of fluffy threads

F. T. Hortal (Spain). USP 2 684 565, July 27, 1954.

Magnetic system for multiple twist spindles

I. S. Roberts (to American Viscose Corp.). USP 2 684 566, July 27, 1954.

Oil cups for bearings for spindles for heavy yarn packages

E. P. R. Scragg (to Ernest Scragg and Sons Ltd.). BP 698 141, October 7, 1953.

Spinning ring traveler

A. F. Pieper. USP 2 683 346, July 13, 1954.

Thread guide traverse mechanism for textile ring spinning frames, speed frames and the like

C. Warrington (to Tweedales and Smalley Ltd.). BP 698 693, October 21, 1953.

Thread-tensioning device for double twisting spindles

Barmer Maschinenfabrik AG., Germany. BP 698 354, October 14, 1953.

Apparatus for winding yarn

B. Mitchell (to North American Rayon Corp.). USP 2 683 571, July 13, 1954.

Forming reserve windings on bobbins in spinning and twisting frames

E. Stammwitz. BP 698 752, October 21, 1953.

FABRICS C

WARPING, SLASHING, YARN PREPARATION C 1

Beaming apparatus on warpers

Maschinenfabrik Benninger AG, Switzerland. BP 700 135, November 25, 1953.

Device on an automatic pirn winder for depositing on a pirn skewer board the ejected pirns

W. Schweiter and K. Marx (to Schweiter Ltd., Switzerland). USP 2 684 798, July 27, 1954.

Driving device for warp machines

S. Furst (to Walter Reiners, Germany). USP 2 683 917, July 20, 1954.

Warp beam

B. B. Cary (to Hayes Industries). USP 2 683 573, July 13, 1954.

WEAVING C 2

Application of weft to warp in circular weaving

H. J. Cooper (England). USP 2 684 084, July 20, 1954.

Circular weaving looms (beating-up device)

G. Casati and C. Cazzaniga (Italy). BP 698 006, October 7, 1953.

Control mechanism for loom

F. Davies (to the British Cotton Industry Research Assoc.). USP 2 683 471, July 13, 1954.

Loom harness

J. J. Kaufmann (to Steel Heddle Mfg. Co.). BP 700 168, November 25, 1953. BP 701 788, January 6, 1954.

Loom stop motion

J. Lachapelle (to Drummondville Cotton Co. Ltd., Canada). USP 2 684 086, July 20, 1954.

Shuttle spur

W. Rickenback (to Draper Corp.). USP 2 683 470, July 13, 1954.

Thread cutter and gripper

G. K. Harris and B. E. Wilson. USP 2 684 085, July 20, 1954.

Weaving loom

W. Felton (to David Crabtree and Son Ltd.). USP 2 684 083, July 20, 1954.

Weft detectors and stop-motions for weaving looms

T. Hindle (to Hindle Son and Co. Ltd.). BP 700 084, November 25, 1953.

KNITTING C 3

Means for feeding elastic yarn to knitting machines

C. W. Perkins and C. C. Payne (to A. Kirkland and Co. Ltd.). BP 698 627, October 21, 1953.

Narrowing mechanism for straight knitting machines

K. P. Bauer (to Textile Machine Works). USP 2 684 582, July 27, 1954.

Transferring loops in knitting

C. F. Miller (to Jacquard Knitting Machine Co., Inc.). USP 2 684 583, July 27, 1954.

GENERAL C 4

Braiding machines

J. H. Eaton (to Luke Turner and Co. Ltd.). BP 698 250, October 14, 1953.

Filters for fluids

E. G. Smith. BP 698 751, October 21, 1953.

Method of making bonded fabric

O. M. Arnold. USP 2 684 319, July 20, 1954.

Process for the manufacture of washable, cloth-like material from cellulose fibers without spinning or weaving

O. Eisenhut (Germany). BP 698 123, October 7, 1953.

Electrostatic coating apparatus

E. M. Ransburg (to Ransburg Electro-Coating Corp.). USP 2 684 656, July 27, 1954.

Flexible sheet material

R. J. Ashall (to Fibreglass Ltd.). BP 700 194, November 25, 1953.

FINISHES D

WET PROCESSES D 1

Fiber scouring and washing bowl

E. H. Brooks, Jr. USP 2 683 365, July 13, 1954.

Washing arrangement for fibrous materials

G. Kulvik and L. J. Hannunkari (Finland). USP 2 683 366, July 13, 1954.

Method of treating fabrics with liquid

M. J. Negro (to Van Vlaanderen Machine Co.). USP 2 684 887, July 27, 1954.

Modification of polyester filaments, yarns and fabrics

D. N. Marvin and J. D. Hall (to Imperial Chemical Industries Ltd.). BP 698 120, October 7, 1953.

Permanent finishing of textile fabrics

F. W. Wakefield (to William Clark and Sons Ltd.). BP 698 244, 245, October 14, 1953.

Process for lubricating regenerated cellulose yarns

F. Fortess (to Celanese Corp.). USP 2 684 311, July 20, 1954.

Treatment of cellulosic material with alkylated polyalkylol melamine resins

J. K. Dixon and N. T. Woodberry (to American Cyanamid Co.). USP 2 684 343, July 20, 1954.

Textile apparatus for the treatment of textile fabric in rope form with a liquid medium

W. J. Cramer, Jr., C. F. Horn and F. E. Lizer (to Celanese Corp.). USP 2 684 586, July 27, 1954.

Treatment of polyacrylonitrile

Farbenfabriken Bayer. BP 700 172, November 25, 1953.

Flameproofing of solid inflammable materials with brominated alkene phosphate compounds

F. J. Cleveland (to Glenn L. Martin Co.). BP 700 292, November 25, 1953.

Phosphorus oxychloride and ammonia: condensed in solvents and used as flame retardants

M. L. Nielsen, J. E. Malowan, R. L. Jenkins, and H. K. Nason (to Monsanto Chemical Co.). USP 2 661 263, 264, 311, 341, 342, December 1, 1953.

These patents have in common the general idea of flameproofing with agents produced by the reaction of phosphorus oxychloride and ammonia, condensates which have been suggested in the past for flameproofing finishes. The innovation is the application of a newly syntheticized compound of this type available as a water-soluble solid powder, ready for use. Summary in *Am. Dyestuff Reptr. 43:* 445 (July 5, 1954).

Process and means for obviating or minimizing the shrinkage of textile materials

A. G. H. Michie and A. S. Wild (to Imperial Chemical Industries Ltd.). BP 700 100, November 25, 1953.

Shrinkproofing wool: acid colloidal solutions of methylated methylolmelamines used

K. E. Folkers (to Monsanto Chemical Co.). USP 2 661 313, December 1, 1953. Summary in *Am. Dyestuff Reptr. 43:* 446 (July 5, 1954).

DYEING AND PRINTING D 2

Coloring matters of the thiazine series

R. J. Fielden and D. G. Wilkinson (to Imperial Chemical Industries Ltd.). BP 698 200, October 7, 1953.

Developing process

Durand and Huguenin (Switzerland). BP 707 132. Summary in *Dyer 111:* 810 (May 28, 1954).

Dyeing of blended yarns, mixture fabrics and the like

S. N. Bradshaw (to Courtaulds Ltd.). BP 698 192, October 7, 1953.

Fugitive coloration of textiles

L. Hagan (to Deering Milliken Research Trust). USP 2 683 647, July 13, 1954.

High-temperature vat dyeing baths using manganese compounds

F. Fordemwalt (to American Cyanamid Co.). USP 2 683 646, July 13, 1954.

High-temperature vat dyeing baths using trialkanolamines

J. M. Mecco (to American Cyanamid Co.). USP 2 683 645, July 13, 1954.

Intermediate products for the production of phthalocyanines

Farbenfabriken Bayer. BP 698 049, October 7, 1953.

Metallizable polyazo dyes and a process for their manufacture

Sandoz Ltd. (Switzerland). BP 698 008, October 7, 1953.

Method of preparing novel polycarbamides or polyurethanes in printing

Farbenfabriken Bayer. BP 706 717. Summary in *Dyer 111:* 807-808 (May 28, 1954).

Pigment printing emulsions: thermoplastic resins in aqueous phase

E. F. Armatys (to Sun Chemical Corp.). USP 2 663 696, December 22, 1953. Summary in *Am. Dyestuff Reptr. 43:* 446 (July 5, 1954).

Process for dyeing articles made of or containing acrylonitrile polymers

Société Rhodiaceta (France). BP 698 302, October 14, 1953.

Process for the coloration of artificial polyester fibers

R. Hardwick, A. G. H. Michie and A. S. Wild (to Imperial Chemical Industries Ltd.). BP 700 171, November 25, 1953.

Process for dyeing filaments, fibers, bristles, fabrics, films, and like shaped articles of linear polyesters

R. Hardwick and E. Walters (to Imperial Chemical Industries Ltd.). BP 698 490, October 14, 1953.

Process of dyeing and printing and composition therefor

F. Baumann, B. Bienert and G. Rosch (to Farbenfabriken Bayer AG). USP 2 683 643, July 13, 1954.

Process of dyeing and printing with phthalocyanine

Farbenfabriken Bayer. BP 698 039, October 7, 1953.

Vat dyeing of acrylonitrile textile materials

J. E. Livak (to Deering Milliken Research Trust). USP 2 683 644, July 13, 1954.

DRY PROCESSES D 3

Method of automatically regulating and means for measurement and/or regulation of the moisture content of textile or like materials

K. S. Laurie (to John Dalglish and Sons Ltd.). BP 698 862, October 28, 1953.

Method of finishing tubular knitted fabric as it comes from wet processing

F. R. Redman, J. Hamilton and J. P. Wilson (to Proctor and Schwartz, Inc.). USP 2 684 519, July 27, 1954.

TESTING AND MEASUREMENT E

YARNS E 2

Continuous thread tester

Cook and Co. Manchester, Ltd. BP 701 491, December 23, 1953.

SCIENCES G

PHYSICS G 2

Static electricity eliminators

W. J. Arrol (to Minister of Supply). BP 689 779, October 21, 1953.

BIOLOGY G 3

Fungicidal compositions

C. W. Suckling (to Imperial Chemical Industries Ltd.). BP 700 185, November 25, 1953.

BOOKS, PAPERS, AND PAMPHLETS

Added to the library during the past month

COTTON

U. S. Bureau of the Census.	Cotton production and distribution, year ending July 31, 1953. (Bulletin 190)	Wash., 1954. 73 p.
Webb, R. W.	Comparison of the relations of six factors of raw-cotton quality to skein strength of carded yarns for eight crop years, 1945-52.	Wash., U. S. Agricultural Marketing Service, May 1954. 33 p.
Wilmeth, Jo Brice	Breaking out bales of cotton stored on head. (Marketing research report no. 61)	Wash. U. S. Agricultural Marketing Service, May 1954. 23 p.

DIRECTORIES

American Cotton Manufacturers Institute.	Directory, 1954-55: officers, directors, committeemen, by-laws.	Charlotte, N. C., 1954. 15 p.
	Davison's cordage, twine and duck trade, 1954.	Ridgewood, N. J., Davison Pub. Co., 1954. 339 p.
Engineering College Research Council.	Review of current research and directory of member institutions, 1953.	State College, Pa., 1953. 330 p.

ELECTRONICS

Institute of Radio Engineers.	1954 Convention record of the IRE. Part 3. Electron devices and component parts. Part 10. Instrumentation and industrial electronics.	N. Y., 1954. 156 p., 100 p.
Roberts, Howard C.	Mechanical measurements by electrical methods. 2d ed.	Pittsburgh, Instruments Pub. Co., 1951. 357 p.
Spencer, James	Maintenance and servicing of electrical instruments. 3d ed.	Pittsburgh, Instruments Pub. Co., 1951. 256 p.

ENGINEERING

Marks, L. S., ed.	Mechanical engineers' handbook. 5th ed.	N. Y., McGraw-Hill, 1951. 2236 p.

EXECUTIVES

Steiner, Alfred R.	The techniques of supervision.	New London, Conn., National Foremen's Institute, Inc., 1954. 207 p.
U. S. Small Business Administration.	Executive development in small business. (Small business management series no. 12).	Wash., Feb. 1954. 44 p.

QUALITY CONTROL

American Society for Quality Control.	Definitions and symbols for control charts. (ASQC standard A1-1951).	N. Y., 1953. 8 p.
Burr, Irving W.	Manual on sampling inspection by military standard, MIL-STD-105A. (ASQC general publications no. 1).	N. Y., American Society fo Quality Control, 1953. 27 p
Enrick, N. L.	Quality control. 2d. enl. ed.	N. Y. Industrial Press, 195 181 p.

POLYESTER FILMS

Bjorksten, Johann	Investigation of Mylar-type polyester films for parachute canopies. (WADC technical report 53-298).	Wright-Patterson Air Force Base, Ohio, Wright Air Development Center, Dec. 195 21 p.

REFERENCES

Chamber of Commerce of the United States.	What's the answer? A brief guide to sources of business statistics.	Wash., 1954. 24 p.
U. S. Federal Trade Commission.	Rules and regulations under the Flammable Fabrics Act effective July 1, 1954.	Wash., 1954. 16 p.
U. S. Small Business Administration.	Basic information sources on marketing research procedures. (Business service bulletin no. 9)	Wash., Mar. 1954. 7 p.
U. S. Small Business Administration.	Basic library reference sources for business use. (Business service bulletin no. 1).	Wash., Feb. 1954. 2 p.

STATISTICS

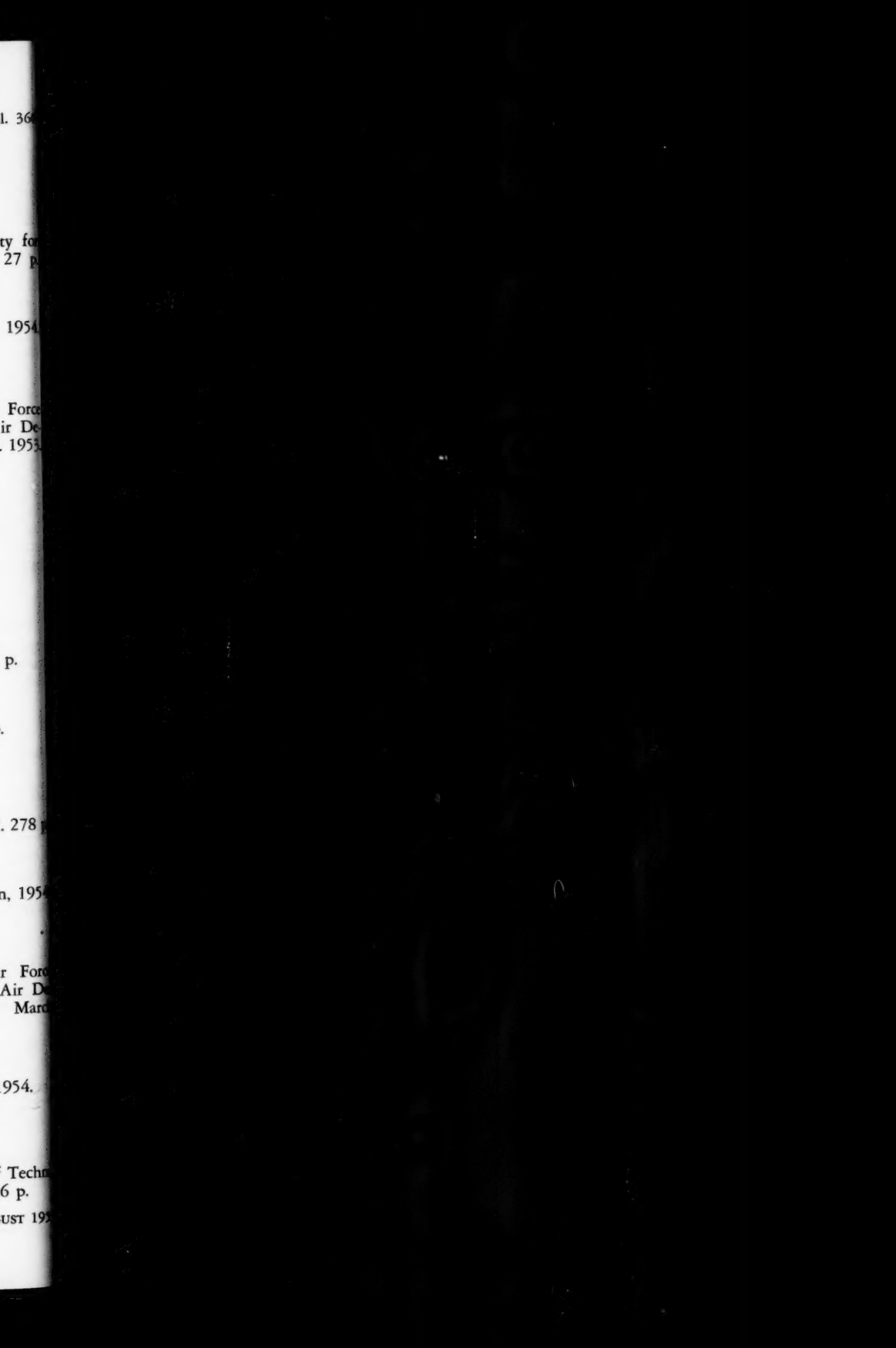
Graf, Ulrich	Statistische Methoden bei textilen Untersuchungen (Statistical methods in textile research).	Berlin, Springer, 1952. 278 p In German.
Huff, Darrell.	How to lie with statistics.	N. Y., W. W. Norton, 195 142 p.

TEMPERATURE AND TEXTILE MATERIALS

Coplan, Myron J.	A study of the effect of temperature on textile materials. (WADC technical report 53-21).	Wright-Patterson Air Force Base, Ohio, Wright Air Development Center, March 1953. 172 p.

TEXTILE RESEARCH

Ahmedabad Textile Industry's Research Association.	ATIRA	Ahmedabad, India, 1954. 28 p.

ULTRASONICS

Kanegis, James	Some applications of ultrasonics to industry. (PB 111 190)	Wash. U. S. Office of Technical Services, 1953. 26 p.